

III. REMARKS

A. INFORMATION DISCLOSURE STATEMENT

In the April 1, 2004 Office Action, the Examiner states that following two references cited in the specification were not submitted in a proper information disclosure statement under 37 C.F.R. § 1.98(b):

- (1) Precision Strain Gauge SG-7/350-Ly11 Omega Engineering, Inc. of Stamford, CT (Page 9); and
- (2) Proprioceptive Illusions Induced by Muscle Vibration: Contribution by Muscle Spindles to Perception?" by Goodwin et al. (Science 715:1382–1384; published 24 March 1972).

Applicant notes that the reference by Goodwin et al., was cited in an Information Disclosure Statement submitted on November 13, 2000, which reference appears to have been acknowledged by the Examiner on March 1, 2004. For the Examiner's convenience, a copy of this Information Disclosure Statement and a copy of the reference are submitted herewith.

With respect to the first reference identified by the Examiner, Applicant respectfully disagrees with the Examiner's characterization of the reference. The citation on Page 9, Lines 1–2 to the Precision Strain Gauge of Omega Engineering identifies an example of a product that may be used in one embodiment of the invention. Applicant identifies this example of a strain gauge in order to comply with enablement requirements. See M.P.E.P § 2164. Identifying a specific example also complies with M.P.E.P § 608.01(v) (requiring "[i]n specifications, every element . . . of a product should be set forth in positive, exact, intelligible language, so that there will be no uncertainty as to what is meant"). Applicant respectfully submits that the strain gauge product is not information that would generally be included in an Information Disclosure Statement. See 37 C.F.R. § 1.56 (Applicant has duty to disclose "information material to patentability"); see also M.P.E.P. § 609. However, if the Examiner desires, Applicant would be willing to discuss this product in more detail with the Examiner.

B. COMMENTS/ARGUMENTS

Claims 1–54 were pending in this application. In the Office Action mailed April 1, 2004, the Examiner rejects Claims 1–54. In particular, the Examiner rejects Claims 11 and 26 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner rejects Claims 4, 11, 30, 35, and 43 under 35 U.S.C. § 112, second paragraph, as being indefinite. In addition, the Examiner rejects Claims 6–14 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,005,548 to Latypov et al. (“Latypov”). The Examiner further rejects Claims 15–22 and 52–54 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,275,213 to Tremblay et al. (“Tremblay”). The Examiner rejects Claims 1–5, 23–24, and 26–44 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,183,259 to Macri et al. (“Macri”) in view of Latypov. The Examiner further rejects Claims 25 and 45–51 under 35 U.S.C. § 103(a) as being unpatentable over Macri in view of Latypov and in further view of Tremblay.

By the foregoing amendments, Applicant has amended Claims 15 and 43. Thus, Applicant respectfully requests reconsideration of Claim 15 and 43 as amended and Claims 1–14, 16–42, and 44–54 as originally filed.

C. REJECTION OF CLAIMS 4, 11, 26, 30, 35, and 43 UNDER 35 U.S.C. § 112

1. Claims 11 and 26

The Examiner rejects Claims 11 and 26 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner states, with respect to Claim 11, that no mention of “signal generator” is found anywhere in the specification and, with respect to Claim 26, no clear description of “passive feedback” is given in the specification.

Applicant respectfully traverses the Examiner’s rejection and interpretation of the written description requirement under 35 U.S.C. § 112, first paragraph. “The subject matter of a claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the written description requirement.” See M.P.E.P. § 2163.02. In addition, disclosure that is present “in an originally filed claim satisfies the written description requirement.” See *Union Oil Co. v. Atlantic Richfield Co.*, 208 F.3d 989, 998 n.4, 54 U.S.P.Q.2d 1227 (Fed. Cir. 2000); see also M.P.E.P.

§ 2163.02. Applicant notes that the terms “signal generator” and “passive feedback” were included in the claims as originally filed. Applicant has also amended the specification to include the terms “signal generator” and “passive feedback.” Therefore, Applicant asserts that the Examiner’s rejection under 35 U.S.C. § 112, first paragraph, is improper, and Applicant respectfully requests that the rejection of Claims 11 and 26 be withdrawn.

2. Claims 4, 11, 30, 35, and 43

The Examiner rejects Claims 4, 11, 30, 35, and 43 under 35 U.S.C. § 112, second paragraph, as being indefinite.

a. Claims 4, 30, and 35

With respect to Claims 4, 30, and 35, the Examiner asserts that the word “substantially” renders the claims indefinite because “it is unclear whether the limitations following the phrase are part of the claimed invention.”

Applicant respectfully traverses the Examiner’s rejection and interpretation of 35 U.S.C. § 112, first paragraph, as applied to the word “substantially.” Claims need only reasonably apprise those skilled in the art as to their scope to satisfy the definiteness requirement. See M.P.E.P. § 2173.05(b); see *also* Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1385, 231 U.S.P.Q. 81 (Fed. Cir. 1986). Several cases have held use of the word “substantial” or “substantially” to satisfy the definiteness requirement. See M.P.E.P. § 2173.05(b)(D); see *also*, York Prods., Inc., v. Central Tractor Farm & Family Center, 99 F.3d 1568, 40 U.S.P.Q.2D 1619 (Fed. Cir. 1996). Therefore, Applicant asserts that the Examiner’s rejection under 35 U.S.C. § 112, second paragraph, is improper, and Applicant respectfully requests that the rejection of Claims 4, 30, and 35 be withdrawn.

b. Claim 11

With respect to Claim 11, the Examiner asserts that the word “adapted” renders the claim indefinite because it “raises a question as to the limiting effect of the language in a claim.”

Applicant respectfully traverses the Examiner’s rejection and interpretation of 35 U.S.C. § 112, first paragraph, as applied to the word “adapted.” As discussed above, claims need only reasonably apprise those skilled in the art as to their scope to satisfy

the definiteness requirement. One with skill in the art would recognize that the phrase “a signal generator adapted for connection to a body” would generally mean a signal generator configured for connection to a body, and Applicant’s disclosure provides examples of how a signal generator is adapted for connection to a body (see, for example, Page 26, Line 8 through Page 27, Line 20). See *also* M.P.E.P. § 2106 (with respect to phrases such as “adapted for,” one “must rely on the Applicant’s disclosure to properly determine the meaning of the claims”).

Therefore, Applicant asserts that the Examiner’s rejection under 35 U.S.C. § 112, second paragraph, is improper, and Applicant respectfully requests that the rejection of Claim 11 be withdrawn.

c. Claim 43

With respect to Claim 43, the Examiner asserts that the phrase “one or more buttons” renders the claim indefinite because “it is unclear whether the limitations following the phrase are part of the claimed invention.”

Applicant respectfully traverses the Examiner’s rejection and interpretation of 35 U.S.C. § 112, first paragraph, as applied to the phrase “one or more buttons.” However, Claim 43 has been clarified, without altering its scope, to read “at least one button” instead of “one or more buttons.” This clarification is not made for patentability purposes, and it believed that the claim would satisfy the statutory requirements for patentability without the entry of such clarification.

D. REJECTION OF CLAIMS 6–14, 15–22, and 52–54 UNDER 35 U.S.C. § 102(e)

The Examiner rejects Claims 6–14 under 35 U.S.C. § 102(e) as being anticipated by Latypov. The Examiner further rejects Claims 15–22 and 52–54 under 35 U.S.C. § 102(e) as being anticipated by Tremblay.

1. Claim 6

With respect to Claim 6, the Examiner asserts that Latypov “teaches methods and systems for determining position and orientation of users in a space and display of virtual space.” In particular, the Examiner asserts that Latypov discloses “providing an immobilizing device which holds a portion of the user’s body immobile,” and “providing vibrating devices disposed upon the immobilizing device and positioned to touch the

immobilized portion of the user's body near muscles which would extend if the immobilized portion of the user's body moved.”

Applicant respectfully traverses this rejection and the Examiner's characterization of the cited reference. For example, Latypov does not appear to disclose “providing an immobilizing device which holds a portion of the user's body immobile.” In Col. 7, Lines 24–51, cited by the Examiner, Latypov discloses a “system for tracking and displaying user's position and orientation,” wherein the system comprises, among other things, a “memory means . . . intended to store data on the user's position and orientation that vary with time depending on his/her movements.” In addition, in Col. 8, Lines 63–67, cited by the Examiner, Latypov discloses the following:

Polling means 11 accomplish polling of memory cells of stacker means 10 and form a series of data characterising the user's position and orientation inclusive of the data from additional means 8 associated with a particular (current) instant of time, and transfer these data to long-term memory means 12 for long-term storage.

These two passages do not, however, disclose “providing an immobilizing device which holds a portion of the user's body immobile.” Rather, Latypov teaches away from “providing an immobilizing device” in stating that the system “must have a little weight, can be easily put on and off, and not hinder the user's movements” (see Col. 8, Lines 32–34) (emphasis added).

As another example, Latypov does not disclose “providing vibrating devices disposed upon the immobilizing device.” The Examiner cites to Col. 14, Lines 41–43, which passage discloses “[i]f a user, using a sensors system gets a load without immersion in the virtual reality, the loads monitoring can be carried out by a processor.” This passage does not at all appear to disclose “providing vibrating devices disposed upon the immobilizing device.”

Thus, Applicant respectfully submits that Latypov fails to teach or suggest every element of Claim 6, and Applicant respectfully requests that the rejection of Claim 6 be withdrawn.

2. Claims 7–9

Claims 7–9, which depend from Claim 6 and include all the limitations of Claim 6, are believed to be patentable for the same reasons stated above with respect to Claim 6

and because of the additional limitations set forth therein. In addition, Applicant respectfully traverses the rejection of each of Claims 7–9 and the Examiner's characterization of the cited reference as applied to Claims 7–9. Since the prior art reference fails to teach or suggest every element of Claims 7–9, Applicant respectfully requests that the rejection of Claims 7–9 be withdrawn.

3. Claim 10

With respect to Claim 10, the Examiner asserts that Latypov teaches an input system for a user comprising, among other things, “an immobilizing device which restricts the motion of a portion of the user's body,” “a vibrating device disposed substantially adjacent to a nerve spindle of a muscle of the user's body,” and “a processing unit which sends signals to the vibrating devices to control the operation of the vibrating devices.”

Applicant respectfully traverses this rejection and the Examiner's characterization of the cited reference. For example, as discussed above with respect to Claim 6, Latypov does not appear to disclose “an immobilizing device which restricts the motion of a portion of the user's body.” In Col. 3, Lines 20–23, cited by the Examiner, Latypov teaches away from the present invention in stating “[a]nother object of this invention is to provide for a user the possibility, in the course of tracking of his/her movements, to move in space without any restrictions, in a natural manner” (emphasis added).

As another example, Latypov does not appear to disclose “a vibrating device disposed substantially adjacent to a nerve spindle of a muscle of the user's body.” The Examiner, in the Office Action, does not specify a passage in Latypov that teaches such an element, and Applicant was unable to identify how Latypov discloses the use of a vibrating device as claimed.

As a further example, Latypov does not appear to disclose “a processing unit which sends signals to the vibrating devices to control the operation of the vibrating devices.” The Examiner cites to Col. 4, Lines 22–26, which passage discloses a “means for processing digital data to construct a mathematical model of the three-dimensional space and a user in such space, having . . . an output for outputting data on the user's position and orientation in the simulated three-dimensional space.” This

passage does not appear to disclose “a processing unit which sends signals to the vibrating devices to control the operation of the vibrating devices.”

Thus, Applicant respectfully submits that Latypov fails to teach or suggest every element of Claim 10, and Applicant respectfully requests that the rejection of Claim 10 be withdrawn.

4. Claims 11–14

Claims 11–14, which depend from Claim 10 and include all the limitations of Claim 10, are believed to be patentable for the same reasons stated above with respect to Claim 10 and because of the additional limitations set forth therein. In addition, Applicant respectfully traverses the rejection of each of Claims 11–14 and the Examiner’s characterization of the cited reference as applied to Claims 11–14. Since the prior art reference fails to teach or suggest every element of Claims 11–14, Applicant respectfully requests that the rejection of Claims 11–14 be withdrawn.

5. Claim 15

With respect to Claim 15, Examiner asserts that Tremblay teaches “[a] method for providing, an indication to a user that his body has moved when it has not.” In particular, the Examiner asserts that Tremblay discloses “detecting the intended motion of a portion of the user’s body” and “providing sensory feedback, which is a reflection of the intended motion.”

Applicant respectfully traverses this rejection and the Examiner’s characterization of the cited reference. In addition, Claim 15 has been clarified without altering its scope. Claim 15 now recites, among other things, “detecting the intended motion of a portion of the user’s body, wherein the portion of the user’s body is substantially immobilized.” This clarification is not made for patentability purposes, and it is believed that the claim would satisfy the statutory requirements for patentability without the entry of such clarification.

For example, Tremblay does not appear to disclose “detecting the intended motion of a portion of the user’s body, wherein the portion of the user’s body is substantially immobilized.” In Col. 17, Lines 34–67, cited by the Examiner, Tremblay discloses “[a]n instrumented glove, optionally comprising a joint angle sensor and spatial position sensor, [that is used to] to simulate the position and motion of a virtual

hand.” Motion of the virtual hand corresponds to movement of the user’s actual hand (see Col. 17, Lines 58–59), wherein the user’s actual hand is not substantially immobilized. Tremblay does not appear to discuss detecting an intended motion of a substantially immobilized portion of the user’s body.

Accordingly, Applicant respectfully submits that Tremblay fails to teach or suggest every element of Claim 15, and Applicant respectfully requests that the rejection of Claim 15 be withdrawn.

6. Claims 16–22

Claims 16–22, which depend from Claim 15 and include all the limitations of Claim 15, are believed to be patentable for the same reasons stated above with respect to Claim 15 and because of the additional limitations set forth therein. In addition, Applicant respectfully traverses the rejection of each of Claims 16–22 and the Examiner’s characterization of the cited reference as applied to Claims 16–22. Since the prior art reference fails to teach or suggest every element of Claims 16–22, Applicant respectfully requests that the rejection of Claims 16–22 be withdrawn.

7. Claim 52

With respect to Claim 52, the Examiner asserts that Tremblay teaches “a method for a user to control an environment simulated on a computer system where the user is modeled within the simulated environment.” In particular, the Examiner asserts that Tremblay discloses “providing at least one immobilizing device which restricts the motion of at least a portion of the user’s body” and “detecting the forces exerted by the immobilized portion of the user’s body against the immobilizing device.”

Applicant respectfully traverses this rejection and the Examiner’s characterization of the cited reference. For example, Tremblay does not appear to disclose “providing at least one immobilizing device which restricts the motion of at least a portion of the user’s body.” The Examiner, in the Office Action, does not specify a passage in Tremblay that teaches such an element. In addition, as discussed above with respect to Claim 15, Tremblay appears to disclose a system that produces movement of a virtual hand based on motion of the user’s actual hand, wherein the user’s actual hand is not immobilized. No use of an immobilizing device appears to be disclosed. In

addition, Tremblay does not appear to teach the “detecting [of] forces exerted by the immobilized portion of the user’s body against the immobilizing device.”

Thus, Applicant respectfully submits that Tremblay fails to teach or suggest every element of Claim 52, and Applicant respectfully requests that the rejection of Claim 52 be withdrawn.

8. Claims 53–54

Claims 53–54, which depend from Claim 52 and include all the limitations of Claim 52, are believed to be patentable for the same reasons stated above with respect to Claim 52 and because of the additional limitations set forth therein. In addition, Applicant respectfully traverses the rejection of each of Claims 53–54 and the Examiner’s characterization of the cited reference as applied to Claims 53–54. Since the prior art reference fails to teach or suggest every element of Claims 53–54, Applicant respectfully requests that the rejection of Claims 53–54 be withdrawn

E. REJECTION OF CLAIMS 1–5, 23–25, and 26–51 UNDER 35 U.S.C. § 103(a)

The Examiner rejects Claims 1–5, 23–24, and 26–44 under 35 U.S.C. § 103(a) as being unpatentable over Macri in view of Latypov. The Examiner further rejects Claims 25 and 45–51 under 35 U.S.C. § 103(a) as being unpatentable over Macri in view of Latypov and in further view of Tremblay.

1. Claim 1

With respect to Claim 1, the Examiner asserts that Macri teaches “the simulation of physical movements with, subsequently, the use of a joystick and other input devices in which the user has control of images.” The Examiner recognizes, however, that Macri “doesn’t teach human simulation via motion sensors.” The Examiner then asserts that Latypov discloses “an immobilizing device, which restricts the motion of a portion of the user’s body” and “sensors, which detect forces applied by the restricted portion of the user’s body.”

Applicant respectfully traverses this rejection and the Examiner’s characterization of the cited references. In particular, neither of the cited references appears to disclose “an immobilizing device which restricts the motion of a portion of a user’s body.” In Col. 2, Lines 54–56, cited by the Examiner, Latypov discloses that “[a]n on-helmet display tunes a virtual reality image according to the received data on the movements of the

platform.” This passage, and other portions of Latypov as discussed above, does not appear to relate to an “immobilizing device which restricts the motion of a portion of a user’s body.”

Thus, Applicant respectfully submits that Macri, alone or in view of Latypov, fails to teach or suggest every element of Claim 1, and Applicant respectfully requests that the rejection of Claim 1 be withdrawn.

2. Claims 2–5

Claims 2–5, which depend from Claim 1 and include all the limitations of Claim 1, are believed to be patentable for the same reasons stated above with respect to Claim 1, and because of the additional limitations set forth therein. In addition, Applicant respectfully traverses the rejection of each of Claims 2–5 and the Examiner’s characterization of the cited references as applied to Claims 2–5. Since the prior art references fail to teach or suggest every element of Claims 2–5, Applicant respectfully requests that the rejection of Claims 2–5 be withdrawn.

3. Claim 23

With respect to Claim 23, the Examiner asserts that the combination of Macri and Latypov teaches an input system for use with a simulator. In particular, the Examiner asserts that the references teach, among other things, an immobilizing device, wherein the immobilizing device holds “the head of a user in substantially a fixed position with respect to the user’s torso” and wherein the immobilizing device comprises “sensors to detect a force exerted by the user in attempting to move the user’s head.”

Applicant respectfully traverses this rejection and the Examiner’s characterization of the cited references. For example, as discussed previously, neither of the cited references appears to disclose an immobilizing device. The Examiner cites Col. 8, Lines 4–8 of Macri, which states that “[i]nput and output with the user can also be accomplished with virtual reality devices such as a virtual reality glove and helmet worn by the user.” However, Macri does not appear to disclose “an immobilizing device.” In addition, the cited references do not appear to further teach an immobilizing device that holds “the head of a user in substantially a fixed position with respect to the user’s torso” and that comprises “sensors to detect a force exerted by the user in attempting to move the user’s head.”

Thus, Applicant respectfully submits that Macri, alone or in view of Latypov, fails to teach or suggest every element of Claim 23, and Applicant respectfully requests that the rejection of Claim 23 be withdrawn.

4. Claims 24–44

Claims 24–44, which depend from Claim 23 and include all the limitations of Claim 23, are believed to be patentable for the same reasons stated above with respect to Claim 23, and because of the additional limitations set forth therein. In addition, Applicant respectfully traverses the rejection of each of Claims 24–44 and the Examiner's characterization of the cited references as applied to Claims 24–44. Since the prior art references fail to teach or suggest every element of Claims 24–44, Applicant respectfully requests that the rejection of Claims 24–44 be withdrawn.

5. Claim 45

With respect to Claim 45, the Examiner asserts that Macri teaches “the simulation of physical movements with, subsequently, the use of a joystick and other input devices in which the user has control of images.” The Examiner recognizes, however, that Macri “doesn't teach human simulation via motion sensors or significant vibration of sensors.” The Examiner then asserts that Latypov discloses “methods and systems for determining position and orientation of users in a space and display of virtual space.” The Examiner states, however, that neither Macri nor Latypov discloses “sensor vibration.” The Examiner then cites Tremblay as disclosing the providing of “tactile feedback to various sensing body parts.”

In the rejection of Claim 45, the Examiner asserts that Macri and Tremblay teach an “immobilizing device comprising sensors.” Applicant respectfully traverses this rejection and the Examiner's characterization of the cited references. For example, as discussed previously, neither of the cited references appears to disclose an immobilizing device. In particular, the Examiner cites Col. 4, Lines 39–62 of Macri for disclosing an immobilizing device comprising sensors. This passage does not appear to make mention of any immobilizing device or sensors. The Examiner also cites Col. 4, Lines 24–25 of Latypov. As discussed above, Latypov teaches away from the present invention in stating, “[a]nother object of this invention is to provide for a user the

possibility, in the course of tracking of his/her movements, to move in space without any restrictions" (see Col. 3, lines 22–24) (emphasis added).

Thus, Applicant respectfully submits that Macri, alone or in view of Latypov and of Tremblay, fails to teach or suggest every element of Claim 45, and Applicant respectfully requests that the rejection of Claim 45 be withdrawn.

6. Claims 46–51

Claims 46–51, which depend from Claim 45 and include all the limitations of Claim 45, are believed to be patentable for the same reasons stated above with respect to Claim 45, and because of the additional limitations set forth therein. In addition, Applicant respectfully traverses the rejection of each of Claims 46–51 and the Examiner's characterization of the cited references as applied to Claims 46–51. Since the prior art references fail to teach or suggest every element of Claims 46–51, Applicant respectfully requests that the rejection of Claims 46–51 be withdrawn.

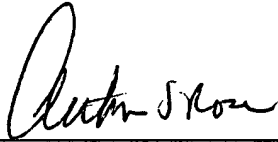
IV. CONCLUSION

In view of the foregoing, the present application is believed to be in condition for allowance, and such allowance is respectfully requested. If further issues remain to be resolved, the Examiner is cordially invited to contact the undersigned such that any remaining issues may be promptly resolved. Also, please charge any additional fees, including any fees for additional extension of time or credit overpayment, to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 8/2/04

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